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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,213	08/09/2000	Glen D. Stone	50N3540/1449	5599

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EXAMINER	
ALI, SYED J	

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/634,213	STONE ET AL.	
	Examiner	Art Unit	
	Syed J Ali	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 30, 2004 has been entered.

2. This office action is in response to the amendment filed July 30, 2004. Claims 1-41 are presented for examination.

3. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Specification

4. The cross reference related to the application cited in the specification must be updated. The amendment filed on March 5, 2001 indicates that the present application is related to "co-pending U.S. Provisional Patent Application Serial No. 06/160,991, entitled 'Method For Quantifying Available System Resources Associated With A Hardware Component,' filed on October 21, 1999." (see page 2 of the amendment). Upon checking PTO records, it appears that the serial number identified above should be "60/160,991". Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 14, 16, and 18-41 are rejected under 35 U.S.C. 102(e) as being anticipated by McColl et al. (USPN 6,763,519) (hereinafter McColl).**

7. As per claim 14, McColl teaches the invention as claimed, including a system for effectively managing resources in an electronic device, comprising:

a resource characterization coupled to said electronic device, said resource characterization corresponding to a requested process (col. 19 lines 30-56); and

an interface manager configured to provide a user interface that includes resource information from said resource characterization (Abstract, col. 19 lines 30-56), a system user viewing said user interface to interactively perform an analysis procedure of available system resources required to support said requested process (Abstract, col. 19 lines 30-56), said user interface including projected resource usages for said requested process and allocated resources for existing processes (col. 19 lines 30-56); and

means for controlling said interface manager (col. 19 lines 30-56).

8. As per claim 16, McColl teaches the invention as claimed, including the system of claim 14 wherein said electronic device is one of a consumer-electronics device, an audio-visual device, a set-top box, and a personal computer device (Abstract, col. 9 lines 5-34).

9. As per claim 18, McColl teaches the invention as claimed, including the system of claim 14 wherein said interface manager displays said projected resource usages for said requested process in combination with said allocated resources for said existing processes to thereby allow said system user to interactively manage said resources in said electronic device (Abstract, col. 19 lines 30-56) by selecting one of a request cancellation, an existing task cancellation and a resource analysis procedure that is performed by referencing an expanded user interface (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7).

10. As per claim 19, McColl teaches the invention as claimed, including the system of claim 14 wherein a system user generates a request to instantiate said requested process on said electronic device (col. 19 line 30 - col. 20 line 7).

11. As per claim 20, McColl teaches the invention as claimed, including the system of claim 19 wherein an allocation manager evaluates said resource characterization in response to said request from said software module (col. 19 line 30 - col. 20 line 7).

12. As per claim 21, McColl teaches the invention as claimed, including the system of claim 20 wherein said resource characterization includes one or more resource listings and one or more

corresponding resource usage values that are required for a deterministic performance of said requested process (col. 19 line 30 - col. 20 line 7).

13. As per claim 22, McColl teaches the invention as claimed, including the system of claim 20 wherein said resource characterization includes resource information regarding total available resources from said electronic device (col. 19 lines 30-56).

14. As per claim 23, McColl teaches the invention as claimed, including the system of claim 20 wherein said allocation manager compares resource usage values from said resource characterization and current available resource values from said electronic device to determine whether to authorize said requested process (col. 19 line 30 - col. 20 line 7).

15. As per claim 24, McColl teaches the invention as claimed, including the system of claim 23 wherein said allocation manager authorizes said requested process whenever said resource usage values from said resource characterization are less than or equal to said current available resource values from said electronic device (col. 19 line 30 - col. 20 line 7).

16. As per claim 25, McColl teaches the invention as claimed, including the system of claim 23 wherein said allocation manager denies said requested process whenever said resource usage values from said resource characterization are greater than said current available resource values from said electronic device (col. 19 line 30 - col. 20 line 7).

17. As per claim 26, McColl teaches the invention as claimed, including the system of claim 24 wherein a picokernel in said electronic device instantiates and executes said requested process after said allocation manager authorizes said requested process (Abstract, col. 9 lines 35-61; col. 19 lines 30-43).

18. As per claim 27, McColl teaches the invention as claimed, including the system of claim 14 wherein said interface manager displays current existing resource usages in a normal operational mode on said user interface (col. 19 lines 30-56).

19. As per claim 28, McColl teaches the invention as claimed, including the system of claim 27 wherein said user interface includes a current resource indicator that provides information regarding current existing resource usages on said electronic device (col. 19 lines 30-56).

20. As per claim 29, McColl teaches the invention as claimed, including the system of claim 14 wherein one of a system user and a network entity generates a request to instantiate a new task on said electronic device (col. 19 line 30 - col. 20 line 7).

21. As per claim 30, McColl teaches the invention as claimed, including the system of claim 29 wherein said interface manager displays current existing resource usages and said projected resource usages on said user interface in a request mode, said projected resource usages including additional resources required for said new task (col. 19 lines 30-56).

22. As per claim 31, McColl teaches the invention as claimed, including the system of claim 30 wherein said user interface includes a projected resource indicator that provides information regarding said projected resource usages that include additional resources required for said new task (col. 19 lines 30-56).

23. As per claim 32, McColl teaches the invention as claimed, including the system of claim 30 wherein said user interface includes a request result field that provides information regarding whether sufficient additional resources are available to instantiate said new task (col. 19 line 30 - col. 20 line 7).

24. As per claim 33, McColl teaches the invention as claimed, including the system of claim 30 wherein an allocation manager allocates resources to instantiate said new task when sufficient additional resources are available (col. 19 line 30 - col. 20 line 7).

25. As per claim 34, McColl teaches the invention as claimed, including the system of claim 30 wherein said system user cancels said request whenever said user interface indicates that sufficient additional resources are not available (col. 19 line 30 - col. 20 line 7).

26. As per claim 35, McColl teaches the invention as claimed, including the system of claim 30 wherein said system user cancels an existing task whenever said user interface indicates that sufficient additional resources are not available (col. 19 line 30 - col. 20 line 7).

27. As per claim 36, McColl teaches the invention as claimed, including the system of claim 30 wherein said system user selects an expanded user interface whenever said user interface indicates that sufficient additional resources are not available (col. 19 line 30 - col. 20 line 7).

28. As per claim 37, McColl teaches the invention as claimed, including the system of claim 30 wherein said expanded user interface comprises a task summary display that includes existing-task resource usage details and projected-task resource usage details (col. 19 lines 30-56).

29. As per claim 38, McColl teaches the invention as claimed, including the system of claim 36 wherein said expanded user interface comprises a task details display that includes individual resource details for one or more selected tasks (col. 19 lines 30-56).

30. As per claim 39, McColl teaches the invention as claimed, including the system of claim 36 wherein said system user performs a resource analysis procedure using said expanded user interface, and responsively cancels one or more existing tasks based on said resource analysis procedure (col. 19 line 30 - col. 20 line 7).

31. As per claim 40, McColl teaches the invention as claimed, including a computer-readable medium comprising program instructions for managing resources in an electronic device by performing the steps of:

referencing a resource characterization with an interface manager, said resource characterization corresponding to a requested process (col. 19 lines 30-56);

generating a user interface with said interface manager based upon said resource characterization (col. 19 lines 30-56), said user interface including projected resource usages for said requested process and allocated resources for previously existing processes (col. 19 lines 30-56); and

controlling said interface manager with a processor that is coupled to said electronic device (col. 19 lines 30-56).

32. As per claim 41, McColl teaches the invention as claimed, including a system for managing resources in an electronic device, comprising:

means for maintaining a resource characterization, said resource characterization corresponding to a requested process (col. 19 lines 30-56);

means for generating a user interface based upon said resource characterization (col. 19 lines 30-56); and

means for controlling said means for generating a user interface (col. 19 lines 30-56).

Claim Rejections - 35 USC § 103

33. **Claims 1-13, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McColl in view of Gulick (USPN 6,502,123).**

34. As per claim 1, McColl teaches the invention as claimed, including a method of interfacing to a user of a device, comprising:

displaying a representation of a currently used portion of a processing capacity of a device (Abstract, col. 9 lines 5-34; col. 19 lines 30-56), said user viewing said representation to interactively perform an analysis procedure of available system resources required to support an additional process (Abstract, col. 19 lines 30-56), said representation including projected resource usages for said additional processes (col. 19 lines 30-56).

35. Gulick teaches the invention as claimed, including the following limitations not shown by McColl:

monitoring resources relating to processing of isochronous tasks in an isochronous processing device (col. 8 lines 46-67).

36. It would have been obvious to one of ordinary skill in the art to combine McColl and Gulick since the scheduling method and resource allocation method provided by McColl is given in a very broad manner, as it is meant to apply to essentially any type of processing system, including many different types of operating systems (col. 9 lines 5-34). Gulick addresses that many conventional systems do not have support for multimedia devices that operate in real-time, such as isochronous devices (col. 1 lines 25-43). The scheduling mechanism used by Gulick is decidedly similar to that of McColl, in that a determination is made as to whether there are enough available system resources to support the requesting task. Thus, to modify McColl to include support for isochronous processes adds features to McColl that would support a wider variety of systems, provided that they meet the criteria set forth in the system design that McColl requires (col. 9 lines 5-34).

37. As per claim 2, Gulick teaches the invention as claimed, including the method of claim 1, wherein the device is selected from an isochronous bus, an IEEE-1394 bus, a programmable computer performing isochronous processing, an isochronous data encoder, an isochronous data decoder, an isochronous data transcoder, a source of isochronous data, a sink of isochronous data, an audio/video hard disk drive [AVHDD], an isochronous data storage and retrieval device, and a device capable of concurrently performing at least one isochronous task (Abstract; col. 1 lines 12-24; col. 4 lines 33-67).

38. As per claim 3, Gulick teaches the invention as claimed, including the method of claim 1, further comprising:

receiving a user request to initiate a task, wherein the displaying is initiated when honoring the user request would exceed the isochronous processing capacity (col. 17 lines 17-29).

39. As per claim 4, McColl teaches the invention as claimed, including the method of claim 3, further comprising:

accepting a user selection of at least one of a plurality of isochronous tasks currently active on the device (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7); and

sacrificing the selected task (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7).

40. As per claim 5, McColl teaches the invention as claimed, including the method of claim 4, wherein the sacrificing is selected from terminating the selected task, suspending the selected task and performing the selected task in a degraded mode of operation (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7).

41. As per claim 6, McColl teaches the invention as claimed, including the method of claim 1, wherein the representation graphically shows a relationship between the currently used portion and the isochronous processing capacity (col. 19 lines 30-56).

42. As per claim 7, McColl teaches the invention as claimed, including the method of claim 1, wherein the representation shows how the currently used portion is allocated among a plurality of isochronous tasks currently active on the device (col. 19 lines 30-56).

43. As per claim 8, McColl teaches the invention as claimed, including a method of interfacing to a user of an isochronous device, comprising:

receiving a user request to initiate a task (col. 19 lines 30-56; col. 21 lines 4-11);

displaying a representation of a processing capacity of a device (Abstract, col. 9 lines 5-34; col. 19 lines 30-56), said user viewing said representation to interactively perform an analysis procedure of available system resources required to support said task (Abstract, col. 19 lines 30-56), said representation including currently-allocated resources for previously-existing tasks and projected resource usages for said task (col. 19 lines 30-56); and

accepting a user selection of a currently active task that is to be sacrificed in favor of the requested task (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7).

44. Gulick teaches the invention as claimed, including the following limitations not shown by McColl:

monitoring resources relating to processing of isochronous tasks in an isochronous processing device (col. 8 lines 46-67); and

the displaying being initiated when honoring the user request would exceed the processing capacity (col. 17 lines 17-29).

45. As per claim 9, Gulick teaches the invention as claimed, including the method of claim 8, wherein the device is selected from an isochronous bus, an IEEE-1394 bus, a programmable computer performing isochronous processing, an isochronous data encoder, an isochronous data decoder, an isochronous data transcoder, a source of isochronous data, a sink of isochronous data, an audio/video hard disk drive [AVHDD], a isochronous data storage and retrieval device, and a device capable of concurrently performing more than one isochronous task (Abstract; col. 1 lines 12-24; col. 4 lines 33-67).

46. As per claim 10, McColl teaches the invention as claimed, including the method of claim 8 wherein the representation comprises a representation of a projected state of the isochronous processing capacity if the requested task were initiated (col. 19 lines 30-56).

47. As per claim 11, McColl teaches the invention as claimed, including the method of claim 8 wherein the sacrificing is selected from terminating the selected task, suspending the selected task and converting the selected task to an asynchronous mode of operation (col. 19 lines 30-43; col. 19 line 57 - col. 20 line 7).

48. As per claim 12, McColl teaches the invention as claimed, including a method of indicating to a user a current usage of a device, comprising:

displaying a representation for a particular one of a plurality of tasks being handled by the device (Abstract, col. 9 lines 5-34; col. 19 lines 30-56), said user viewing said representation to interactively perform an analysis procedure of available system resources required to support an additional process (Abstract, col. 19 lines 30-56), the representation being of a portion of the capacity used by the particular task (col. 19 lines 30-56); and

displaying, when the representation is selected, a breakdown of a plurality of types of resources used by the particular task (col. 19 lines 30-56).

49. Gulick teaches the invention as claimed, including the following limitations not shown by McColl:

monitoring resources relating to processing of isochronous tasks in an isochronous processing device (col. 8 lines 46-67).

50. As per claim 13, Gulick teaches the invention as claimed, including the method of claim 12, wherein the device is selected from an isochronous bus, an IEEE-1394 bus, a programmable computer performing isochronous processing, an isochronous data encoder, an isochronous data

decoder, an isochronous data transcoder, a source of isochronous data, a sink of isochronous data, an audio/video hard disk drive [AVHDD], a isochronous data storage sand retrieval device, and a device capable of concurrently performing at least one isochronous task (Abstract; col. 1 lines 12-24; col. 4 lines 33-67).

51. As per claim 15, Gulick teaches the invention as claimed, including the system of claim 14, wherein said electronic device is coupled to an electronic network that is implemented according to an IEEE Std 1394 serial bus standard (Abstract; col. 1 lines 12-24; col. 4 lines 33-67).

52. As per claim 17, Gulick teaches the invention as claimed, including the system of claim 14 wherein said requested process includes one or more time-sensitive isochronous processes for manipulating time-critical isochronous data, and wherein said means for controlling includes at least one of a processor device and dedicated logic (col. 8 lines 46-67).

Response to Arguments

53. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new grounds of rejection.

Conclusion

54. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Syed Ali
September 9, 2004

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